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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID H. HANES

Appeal 2009-005842
Application 10/753,251¹
Technology Center 2600

Decided: February 23, 2010

Before JOHN C. MARTIN, MARC S. HOFF,
and BRADLEY W. BAUMEISTER, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The real party in interest is Hewlett-Packard Development Company, L.P.

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 (a) from a Final Rejection of claims 1-26. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

Appellant's invention concerns a system for analyzing moving pictures expert group (MPEG)-formatted files, having a format analysis software application and a processing element operable to execute the application, wherein the application is adapted to read a rule having at least one logical instruction defining a format requirement and to compare a portion of the file with the rule to make a determination of the validity of the file (Abstract).

Claim 1 is exemplary:

1. A method of analyzing a moving pictures expert group (MPEG)-formatted video/audio file, comprising:

defining a rule comprising at least one parameter that logically defines a format requirement for determining whether the MPEG-formatted file is decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder;

reading a portion of the file;

comparing the portion of the file with the rule; and

determining whether the file violates the rule.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Udea	US 2001/0026511 A1	Oct. 4, 2001
Shirakawa	US 2002/0044760 A1	Apr. 18, 2002
Nakamura	US 2002/0169742 A1	Nov. 14, 2002

Fu	US 2004/0136352 A1	July 15, 2004
Wee	US 6,973,130 B1	Dec. 6, 2005

Claims 1, 4, 5, 7-11, 14-16, 18, 19, 21-23, 25, and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wee in view of Fu.

Claims 2, 3, and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wee in view of Fu and Shirakawa.

Claims 6, 12, and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wee in view of Fu and Ueda.

Claims 17 and 24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wee in view of Fu and Nakamura.

Rather than repeat the arguments of Appellant or the Examiner, we make reference to the Appeal Brief (filed Mar. 14, 2008), the Reply Brief (filed Aug. 12, 2008) and the Examiner's Answer (mailed June 13, 2008) for their respective details.

ISSUE

The Examiner finds that Fu discloses defining a rule comprising at least one parameter that logically defines a format requirement for determining whether the MPEG-formatted file is decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder (Ans. 4, 11-12).

Appellant contends that although Fu appears to be disclosing that non-MPEG formatted files such as direct satellite system (DSS) encoded files are converted to MPEG format for use by set-top boxes, Fu does not appear to disclose or even suggest that once the converted file is in MPEG format that a rule is defined or used for determining whether the MPEG-formatted file is

decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder (App. Br. 6-7).

Appellant's contentions present us with the following issue:

Did Appellant show that the Examiner erred in finding that the combination of Wee and Fu teaches defining a rule comprising at least one parameter that logically defines a format requirement for determining whether the MPEG-formatted file is decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder?

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellant, the invention concerns a system for analyzing moving pictures expert group (MPEG)-formatted files, having a format analysis software application and a processing element operable to execute the application, wherein the application is adapted to evaluate an MPEG rule set comprised of one or more rules defining one or more format requirements (for the purpose of reading a rule) and to compare a portion of the file with the rule to make a determination of the validity of the file. A group of pictures (GOP) file is optional in MPEG-formatted files but is required for playback of the file by a DVD device (Spec. para. [0024]). In the event that a GOP header is not located in the MPEG portion intermediate sequence header 60 and frame sequence 50A, application 122 determines

that the MPEG-formatted file is incompatible for recording on a DVD (Abstract, Spec. paras. [0025], [0028], and [0029]).

Wee

2. Wee discloses an MPEG or other video system, having a "region map" comprised of header information for each frame indicating for each independently coded region in the frame which "image slices" contain data for that region. Using a system of globally and locally defined region groups, the map permits automatic identification of an object through multiple frames (notwithstanding movement) and for select decoding and extraction of that object only, without necessarily decoding all irrelevant image data. (Abstract).

3. Wee discloses an encoder that uses an independent region ("IR") coder 175 for encoding motion vectors from the motion estimation system 165 together with the quantized data. The IR coder applies run-length encoding and Huffman coding to quantized data, and inserts appropriate MPEG header codes (including slice codes) to generate an output bit stream 177. Not all image frames are compressed using motion vectors. However, using an M.P.E.G.-2 process, all data within "I" frames are encoded without using motion estimation and compensation, and select data blocks within "P" and "B" frames may also be encoded in this manner. A control routine 179 determines this encoding according to well-known procedures and algorithms developed for M.P.E.G. coding (Fig. 3, col. 13, ll. 14-30).

4. Wee discloses the beginning of a sequence in a MPEG format is typically recognized by examining the encoded bit stream and detecting twenty-three consecutive zeros, followed by a "one" and the eight bit

sequence "10110101" ("sequence start code" hexadecimal value is "0000001B5" and is designated by the reference numeral 325). Sequence header information 326 then includes various parameters such as picture size, bit rate, buffer size, video standard, and similar parameters, recognized by control codes that proceed [sic] these parameters (Fig. 11, col. 22, ll. 18-37).

5. Wee discloses software that determines for each frame the precise number of regions in the frame, wherein the sequence or GOP header information sets forth the total number of region groups for the sequence or single GOP (this information is used to determine region map (table) size for each frame) (Fig. 7; col. 17, ll. 7-21).

6. Wee discloses that each GOP also contains header information 333, which is recognized by detecting a GOP start code 329 of twenty-three leading zeros followed by the nine bit sequence "110111000" (this hexadecimal GOP start code is "000001B8"). The GOP header information, in connection with the preferred signal format, also preferably includes a user data start code 334 ("000001B2") followed by a group map identification code and group map indicating which global region groups are present in the GOP (Fig. 11, col. 23, ll. 2-12).

7. Wee discloses that a "sequence" 315 can be an entire movie or portion thereof. Each sequence includes header information that contains digital parameters used to decode and display images appearing in the sequence. Each sequence header additionally contains space for user-defined control commands and information (Fig. 11, col. 21, l. 62 - col. 22, l. 2).

Fu

8. Fu discloses a method and system for converting a direct satellite system (DSS) transport stream into a digital video broadcast (DVB) standard MPEG transport stream that includes encapsulating at least a prefix portion and a payload portion of a DSS transport packet into at least a header portion and a payload portion of a DVB transport packet. In light of broadband networks continuing to evolve, this method of conversion was developed due to the need to provide access for legacy devices to ensure interoperability with legacy and disparate systems. For example, in some applications an access device such as a set-top box may require the conversion of DSS proprietary transport streams to standardized DVB transport streams in order to communicate with standardized external MPEG devices, such as personal video recorders (PVRs) or high definition televisions (HDTVs). In order to provide compatibility and interoperability between proprietary and legacy systems, and standardized DVB MPEG compliant systems, it may be necessary to convert the transport stream to meet system requirements. As such, any resulting transport stream should be fully MPEG2 DVB compliant, since a set-top box may lack prior knowledge pertaining to the type of external MPEG decoding device that receives and converts the transport stream (Abstract, paras. [0005], [0009], and [0024]).

9. Fu discloses an MPEG encoding system that includes an A/D converter 16, a video processor 18, a sub-picture encoder 24, a presentation control information (PCI) encoder 26, and an MPEG Video encoder 28. The output signal generated from the video processor 18 may also be received and processed by an MPEG video encoder 28 which, in turn, may be

configured to format the video signal in MPEG format. A conditional access buffer 38 controls propagation of the packets through MUX 36. A track buffer 40 buffers and assembles data packets for further processing. Finally, the assembled packets may be encoded with a forward error correction algorithm within the forward error correction block (FEC) 42 for transmission over a channel as an MPEG formatted digital audio/video signal (Fig. 1A, paras. [0037] and [0039]).

10. Fu discloses an MPEG program may contain a plurality of data streams that are encoded and compressed. The encoded and compressed data streams may be decoded in a set-top box and viewed on a TV. Factors such as a bit rate of the encoded stream, quality of the original source content, and encoder algorithm may typically determine the quality of the output signal. The type of encoding may determine whether another system will be able to decode and interpret a received MPEG data stream (para. [0025]).

Shirakawa

11. Shirakawa discloses a video disk recording/playback device for converting a digital video signal or the like into high-efficiency coded data and recording the coded data on a video disk, or for restoring high-efficiency coded data recorded on the video disk and reproducing an output image. Shirakawa discloses an MPEG video sequence having a sequence header (SH1) followed by interleaved sequence and GOP headers. When retrieving a picture, the starting address of the GOP header is acquired, and decoding is ensued (Abstract, paras. [0010], [0269], and [0323]).

12. Shirakawa discloses that an object of the invention is to facilitate editing such as overwriting and to enable fast playback or retrieval

suitable to viewer's visual characteristics, to reproduce consecutive 'I' pictures smoothly, and to raise the speed of fast playback or retrieval in harmony with human visual characteristics (paras. [0048] and [0051]).

Ueda

13. Ueda discloses an information recording medium comprising a user area, and a spare area including a replacement area, wherein the replacement area may be used instead of a defective area in the user area. The user area and the spare area include a plurality of sectors. Each of the plurality of sectors includes a user data area for recording user data, and an attribute data area for recording defect replacement allowance attribute data. The video and audio reproduction program detects the presence or absence of three files (i.e. "ROOT" directory, "VIDEO_TS" directory, and "VIDEO_TS.IFO") in order to identify the DVD-Video format (para. [0208]).

Nakamura

14. Nakamura discloses a data structure that is constructed by a hierarchy structure comprising a video sequence layer, a GOP layer, a picture layer, a slice layer, a macroblock layer, and a block layer, wherein the video sequence layer starts from a sequence start code and ends at a sequence end code. Control data such as image size, aspect ratio, other data necessary for decoding, and a plurality of GOPs in which the image size and the like are equal are arranged between the sequence start code and the sequence end code (paras. [0008] and [0103]).

PRINCIPLES OF LAW

On the issue of obviousness pursuant to 35 U.S.C § 103, the Supreme Court has stated that “[t]he obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007). Further, the Court stated “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. “One of the ways in which a patent’s subject matter can be proved obvious is by noting that there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *Id.* at 419-420.

The determination of obviousness must consider, *inter alia*, whether a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and whether there would have been a reasonable expectation of success in doing so. *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000). Where the teachings of two or more prior art references conflict, the Examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another. *In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991). If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984). Further, our reviewing court has held that “[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from

following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); *Para-Ordnance Mfg., Inc. v. SGS Importers Int’l, Inc.*, 73 F.3d 1085, 1090 (Fed. Cir. 1995).

ANALYSIS

Claims 1, 4, 5, 7-11, 14-16, 18, 19, 21-23, 25, and 26

Independent claims 1 and 18 recite “a rule comprising at least one parameter that logically defines a format requirement for determining whether the MPEG-formatted file is decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder.”

Independent claim 10 recites “a rule having at least one logical instruction defining a format requirement for determining whether the MPEG-formatted file is decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder.”

Independent claim 25 recites “a rule having at least one logical instruction defining a digital versatile disc (DVD) format requirement, the rule specifying a particular portion of the file to be tested by the rule, and the application comparing the specified portion of the file with the rule.”

The Examiner finds that Fu discloses defining a rule comprising at least one parameter that logically defines a format requirement for determining whether the MPEG-formatted file is decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder (Ans. 4, 11-12).

Appellant contends that although Fu appears to be disclosing that direct satellite system (DSS) encoded files are converted to MPEG format for use by set-top boxes, Fu does not appear to disclose or even suggest that, once the converted file is in MPEG format, a rule is defined or used for determining whether the MPEG-formatted file is decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder (App. Br. 6-7).

We agree with Appellant. Although the combination of Wee and Fu discloses examination of the sequence and GOP header within a video sequence pattern of a standard MPEG file, we do not agree with the Examiner that Fu discloses defining a rule comprising at least one parameter that logically defines a format requirement for determining whether the MPEG-formatted file is decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder. Specifically, Wee discloses that an MPEG formatted file is examined to detect the sequence header wherein a portion of the file is examined to detect the sequence start code having a hexadecimal value of "0000001B5" (FF 4). Wee further discloses a software program that determines the precise number of regions in a frame by examining the sequence and GOP header information which sets forth the total number of region groups for the sequence (FF 5). Fu discloses a method for converting a DSS transport stream into a DVD standard MPEG transport stream *without* any reference to a rule set or definition that determines whether the initial file format or the converted file format is compatible and decodable on a MPEG-capable decoder (FF 8). It is apparent that the conversion disclosed in Fu is automatic.

Therefore, because Appellant has established error in the Examiner's rejection, we will not sustain the Examiner's rejection of claims 1, 4, 5, 7-11, 14-16, 18, 19, 21-23, 25, and 26 under 35 U.S.C. § 103(a) as unpatentable over Wee in view of Fu.

Claims 2, 3, and 13

As noted *supra*, we reversed the rejection of claims 1 and 10 from which claims 2, 3, and 13 depend. We have reviewed Shirakawa (the additional reference applied by the Examiner to reject these claims), and find that it does not teach the limitation that is absent from the combination of Wee and Fu.

We therefore reverse the Examiner's rejections of claims 2, 3, and 13 under 35 U.S.C. § 103, for the same reasons expressed with respect to the § 103 rejection of parent claims 1 and 10, *supra*.

Claims 6, 12, and 20

As noted *supra*, we reversed the rejection of claims 1 and 10, from which claims 6, 12, and 20 depend. We have reviewed Ueda (the additional reference applied by the Examiner to reject these claims) and find that it does not teach the limitation that is absent from the combination of Wee and Fu.

We therefore reverse the Examiner's rejections of claims 6, 12, and 20 under 35 U.S.C. § 103, for the same reasons expressed with respect to the § 103 rejection of parent claims 1 and 10, *supra*.

Claims 17 and 24

As noted *supra*, we reversed the rejection of claims 1 and 10 from which claims 17 and 24 depend. We have reviewed Nakamura (the additional reference applied by the Examiner to reject these claims), and find

that it does not teach the limitation that is absent from the combination of Wee and Fu.

We therefore reverse the Examiner's rejections of claims 17 and 24 under 35 U.S.C. § 103, for the same reasons expressed with respect to the § 103 rejection of parent claims 1 and 10, *supra*.

CONCLUSION OF LAW

Appellant has shown that the Examiner erred in finding that the combination of Wee and Fu teaches defining a rule comprising at least one parameter that logically defines a format requirement for determining whether the MPEG-formatted file is decodable on a first type of MPEG-capable decoder but not decodable on a second type of MPEG-capable decoder, as required by independent claims 1, 10, 18, and 25. Appellant has also shown that this deficiency is not remedied by the additional references relied in the rejections of some of the dependent claims.

ORDER

The Examiner's rejection of claims 1-26 is reversed.

REVERSED

KIS

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